

Crop Tolerance with Pyridate and Clethodim in Chickpea

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Central Ferry Research Farm near Pomeroy, WA

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Methods

The study was established at the Central Ferry Research Farm near Pomeroy, WA. Treatments were applied post emergence (POST) at several different crop stages, detailed in Table 1 and Table 2. The study was conducted in a randomized complete block with 4 replications. Plots were 10' by 30' long and were supplemented with irrigation. Lorox (2.5 lb A⁻¹) and Outlook (21 fl oz A⁻¹) were applied pre-emergence (PRE) at planting to establish a weed free trial. Trial was hand weeded July 5, 2016. Irrigation was shut-off three weeks before harvest. Glyphosate at 32 fl oz A⁻¹ with ammonium sulfate at 3 lb/100 gal was applied 14 days before harvest as a burn down application.

Canopy cover was visually rated 21 days after treatment (DAT) of application A (Table 2). Crop injury was visually rated 6 and 44 DAT of application A (Table 2). Percent pest pressure was visually rated 6 DAT of application A (Table 2). Plots were harvested using a 5' plot combine on September 26, 2016. All data were subjected to an analysis of variance using the statistical package built into the Agricultural Research Manager software system (ARM 8.5.0, Gylling Data Management).

Results

There was no significant crop injury compared to the nontreated was observed at 6 or 44 DAT after application A.

No difference in pest pressure was observed 6 DAT after application A in any treatments.

Percent crop canopy cover was not significantly from the nontreated control.

There was no significant difference in yield observed for any of the treatments. Results confirm chickpeas have a tolerance for pyridate with and without a nonionic surfactant (NIS) when compared to a nontreated control in a weed free environment.

Table 1. Treatment application details

Study Application	A	B	C
Date	June 1, 2016	June 3, 2016	June 22, 2016
Application volume (GPA)	15	15	15
Crop Stage	2-4"	6"	8-10"
Air temperature (°F)	67	78	85
Soil temperature (°F)	64	66	70
Wind velocity (mph, direction)	9, S	4, NW	4, S
Next rain occurred on	June 10, 2016	June 10, 2016	July 8, 2016

Table 2. Percent crop injury, pest pressure, crop injury and yield in chickpeas following applications of pyridate and clethodim at different application timings. Central Ferry, WA, 2016. Means followed by the same letter are not statistically significantly different ($\alpha=0.05$).

Treatment	Application Code	Rate		June 7, 2016	June 7, 2016	June 22, 2016	July 14, 2016	September 26, 2016
				Crop Injury	Pest Pressure	Canopy Cover	Crop Injury	Yield
		lb ai/A		%	%	%	%	lb/A
Nontreated	-	-	-	0	0	100	0	1020
Pyridate (Tough)	A	24 fl oz/A	0.940					
Select Max	B	16.5 fl oz/A	0.125	0	2	76	8	1240
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	A	48 fl oz/A	1.880					
Select Max	B	16.5 fl oz/A	0.125	3	5	73	6	1350
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	A	24 fl oz/A	0.940					
Induce (NIS)	A	0.25% v/v		3	5	75	3	1250
Select Max	B	16.5 fl oz/A	0.125					
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	A	48 fl oz/A	1.880					
Induce (NIS)	A	0.25% v/v		0	3	76	10	1330
Select Max	B	16.5 fl oz/A	0.125					
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	A	24 fl oz/A	0.940					
Select Max	A	16.5 fl oz/A	0.125	0	1	78	11	1270
Agridex (COC)	A	0.25% v/v						
Pyridate (Tough)	A	24 fl oz/A	1.880					
Select Max	A	16.5 fl oz/A	0.125	0	0	79	3	1430
Agridex (COC)	A	0.25% v/v						
Pyridate (Tough)	C	24 fl oz/A	0.940					
Select Max	B	16.5 fl oz/A	0.125	1	1	75	1	1080
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	C	48 fl oz/A	1.880					
Select Max	B	16.5 fl oz/A	0.125	1	1	84	8	1250
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	C	24 fl oz/A	0.940					
Induce (NIS)	C	0.25% v/v		0	4	69	19	1040
Select Max	B	16.5 fl oz/A	0.125					
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	C	48 fl oz/A	1.880					
Induce (NIS)	C	0.25% v/v		3	3	76	14	1200
Select Max	B	16.5 fl oz/A	0.125					
Agridex (COC)	B	0.25% v/v						
Pyridate (Tough)	C	24 fl oz/A	0.940					
Select Max	C	16.5 fl oz/A	0.125	0	0	71	6	1120
Agridex (COC)	C	0.25% v/v						
Pyridate (Tough)	C	24 fl oz/A	1.880					
Select Max	C	16.5 fl oz/A	0.125	2	1	71	16	1240
Agridex (COC)	C	0.25% v/v						

Some of the pesticides discussed in this presentation were tested under an experimental use permit granted by WSDA. Application of a pesticide to a crop or site that is not on the label is a violation of pesticide law and may subject the applicator to civil penalties up to \$7,500. In addition, such an application may also result in illegal residues that could subject the crop to seizure or embargo action by WSDA and/or the U.S. Food and Drug Administration. It is your responsibility to check the label before using the product to ensure lawful use and obtain all necessary permits in advance.